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## REMARKS/ARGUMENTS

In reply to the Office Action mailed January 30, 2004, Applicants respectfully request reconsideration and allowance. In the Office Action, claim 17 was provisionally rejected for obviousness-type double patenting, claims 1-6, 10 and 13 were rejected for indefiniteness and claims 1-20 were rejected for obviousness. In reply, Applicants have amended claims 1, 6, 7, 13 and 15. Claims 1-20 remain pending in the subject application.

Claim 17 was rejected under the judicially created doctrine of obviousness-type double patenting as being obvious over claims 8, 9, 13, 16 and 19 of copending application S.N. 09/925,261 in view of U.S. Patent 3,738,090 (the "Killian patent"). Claim 15, from which claim 17 depends, recites an inlet to the cyclone comprising a first side and a second side with the first side of the inlet being contiguous with the curved outer wall. Claim 15 has been amended to recite that the first side is not substantially tangential to a cross-sectional profile of the gas recovery conduit but the second sidewall of the inlet is substantially tangential to a cross-sectional profile of the gas recovery conduit. Support for this amendment is provided in Figure 7 of the drawings. The Killian patent indicates that the long sidewall 52 contiguous with the curved wall 33 is substantially tangential to the fan casing 26. Column 3, lines 39-40. Moreover, the Office Action indicates that the short side is substantially tangential to a cross-sectional profile of a gas recovery conduit. Office Action at page 2, section 2, third paragraph. Claim 15 is now amended to recite that the long wall is not substantially tangential to the gas recovery conduit. Accordingly, Applicants respectfully submit that the combination of claims 8, 9, 13, 16 and 19 of the copending application and the teachings of the Killian patent would not disclose all of the limitations recited in claim 15 and dependent claim 17. Accordingly, Applicants respectfully request reconsideration and withdrawal of the double patenting rejection.

The Office Action indicates that claims 1-6, 10 and 13 were rejected under 35 U.S.C. §112, second paragraph, for indefiniteness because claim 1 recites "the catalyst particle concentration" in line 6 and "the gaseous fluids concentration" in lines 6-7 of claim 1 without sufficient antecedent basis. Applicants have amended claim 1 to correct this by replacing the term "the" with the term "a" in the two above-quoted clauses. The Examiner further rejected claim 6 because it recites the limitation "said first angular direction" in lines 1-2 thereof without sufficient antecedent basis. Applicants have amended claim 6 to delete the phrase "in said first angular direction". Accordingly, claim 6 no longer lacks antecedent basis. Applicants respectfully submit that the rejections for indefiniteness of claims 1-6 are now overcome. The Examiner also rejected claim 13 for including the fragment "the cyclone." at the end of the claim. Claim 13 has been amended to delete this sentence fragment "the cyclone." Accordingly, Applicants respectfully request reconsideration and withdrawal of all the rejections for indefiniteness.

In the Office Action, the Examiner rejected claims 1-16 and 18-20 under 35 U.S.C. §103(a) as being obvious over U.S. Patent 5,565,020 (the "Niewiedzial patent") in view of the Killian patent. The Killian patent indicates that sidewall 52 forms a substantially

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tangential extension of the fan casing 26 to assure "that particles which enter the conduits will continue to the collectors substantially along an undisturbed trajectory and thus at a velocity which is not diminished by wall collisions and the like." Column 3, lines 40-44. Referring to Figures 3 and 5, this must mean that the fluids and dust arising through the fan casing 26 must be swirling in a clockwise direction induced by fan impeller blades 28. Otherwise, the dust would be pushed into long wall 36 which the above-quoted language indicates is to be avoided. Claim 1 has been amended to recite "said mixture passing from said gas recovery conduit into said at least one cyclone while swirling toward said long side of said cyclone inlet." Support for this amendment is at page 15, line 5 and with reference to Figure 7. Applicants respectfully submit that claim 1 is distinct from the Killian patent because the swirling mixture in the Killian patent does not swirl toward the long side 52 of said cyclone inlet but instead swirls clockwise according to Figures 3 and 5 toward the short side 50 (Fig. 5) of the cyclone inlet. Additionally, Applicants have amended claim 7 to recite that the short side and the long side of the inlet to the cyclone are parallel to each other. Support for this amendment is provided in Figure 7 from which it is clear that the short side 236 and the long side 234 are parallel to each other. It is apparent from Figures 3 and 5 of the Killian patent that the short and long walls 50 and 52, respectively, are not parallel to each other. Moreover, the Killian patent reads: "Referring again specifically to FIG. 5, the sidewalls 50 and 52 of a typical conduit illustrated in FIG. 3 are arranged such that they diverge from the fan casing 26 at an angle, a." Column 3, lines 63-66. Accordingly, Applicants respectfully submit that claim 7 is distinct from the teachings of the Killian patent combined with the teachings of the Niewiedzjal patent. Applicants have already explained with respect to the double patenting rejection that claim 15 is distinct from the teachings of the Killian patent when combined with claim 17 of the copending application S.N. 09/925,261. Applicants respectfully submit for the same reasons that the combined teachings of the Niewiedzjal patent and the Killian patent would not suggest:

a first side of said inlet being contiguous with said curved outer wall and not substantially tangential to a cross-sectional profile of said gas recovery conduit and said second side of said inlet being substantially tangential to a cross-sectional profile of said gas recovery conduit

as recited in amended claim 15. The Office Action and the Killian patent both indicate that the sidewalls 50 and 52 are both tangential to the fan casing 26. According, Applicants respectfully submit that the combined teachings of the Killian patent and the Niewiedzjal patent do not disclose all the limitations in claim 15.

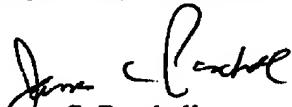
Accordingly, Applicants respectfully submit that independent claims 1, 7 and 15 have limitations that are not provided by the combination of the Killian patent and the Niewiedzjal patent. At least for the same reasons, dependent claims 1-6, 8-14 and 16-20 also contain limitations not suggested by the combination of teachings of the Killian and the Niewiedzjal patents. Hence, Applicants respectfully submit that the rejection of claims 1-20 for obviousness has been overcome.

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Applicants respectfully request reconsideration and allowance of all the claims 1-20 pending in the subject application. Should the Examiner have any questions regarding this matter please feel free to contact the undersigned.

Respectfully submitted,

  
James C. Paschall  
Attorney for Applicants  
Reg. No. 36,887  
(847) 391-2355 (phone)  
(847) 391-2387 (fax)

James W. Hellwege  
Registration No. 28,808  
Washington Counsel (703) 205-8021

JCP/gm